

## CLAIMS

What is claimed is:

1. A searching method for a Security Policy Database comprising:
  - building a peer table;
  - 5 building a set of peer-based Security Policy Database composed of a plurality of peer-based Security Policy Databases;
  - searching the peer table so as to obtain a corresponding peer-based Security Policy Database; and
  - searching the corresponding peer-based Security Policy Database so as to
  - 10 obtain a security policy.
2. The searching method of claim 1, wherein the step of building a peer table further comprises the step of building at least two data in the peer table according to a peer gateway; according to one set of peer gateway, at least two sets of data are built in the peer table.
- 15 3. The searching method of claim 2, wherein one of the two data is an internal network/local area network (LAN) data, the other is an external network/wide area network (WAN) data; one of the two sets of data is a set of internal network/local area network (LAN) data and the other is a set of external network/wide area network (WAN) data.
- 20 4. The searching method of claim 3, wherein each of the internal network/local area network (LAN) data and the external network/wide area network (WAN) data comprises a peer identification, an address, a type and a prefix; the peer identification represents the peer gateway; the address is a network address; the type is an internal network/local area network (LAN)
- 25 section type, an external network/wide area network (WAN) address type or

both; the prefix is the number of the bits for comparing the address.

5. The searching method of claim 4, the address included in the internal network/local area network (LAN) data is an internal network/local area network (LAN) section.
- 5 6. The searching method of claim 4, the address included in the external network/wide area network (WAN) data is an external network/wide area network (WAN) address.
7. The searching method of claim 1, wherein the step of building a peer table further comprises the step of building data in the peer table according to a  
10 default peer gateway; the data comprises a peer identification; an address, a type and a prefix; the peer identification is 0, the address is 0, the type is B, and the prefix is 0.
8. The searching method of claim 1, wherein the step of building a set of peer-based Security Policy Database further comprises the step of building  
15 a peer-based Security Policy Database according to a peer gateway for storing a security policy relating to the peer gateway; according to a plurality of peer gateways, a plurality of peer-based Security Policy Databases are built.
9. The searching method of claim 1, wherein the step of building a set of  
20 peer-based Security Policy Database further comprises a step of building a default peer-based Security Policy Database according to a default peer gateway for storing the security policy relating to the default peer gateway.
10. The searching method of claim 8, wherein the step of building the peer-based Security Policy Database according to a peer gateway is  
25 according to a selector of a security policy, and the selector is a source address or a destination address.

11. The searching method of claim 9, the security policy relating to the default peer gateway is a by-pass security policy or a discard security policy.
12. The searching method of claim 1, wherein step of building a set of peer-based Security Policy Database further comprises a method for adding-in a security policy, the method comprises:  
adding the security policy in the set of peer-based Security Policy Database according to a selector.
13. The searching method of claim 12, wherein the selector is a source address or destination address.
14. The searching method of claim 1, wherein the step of building a set of peer-based Security Policy Database further comprises a method for deleting a security policy, the method comprises:  
deleting the security policy from the set of peer-based Security Policy Database according to a selector.
15. The searching method of claim 14, wherein the selector is a source address or destination address.
16. The searching method of claim 1, wherein the step of searching the peer table further comprises a step of comparing a packet and the peer table.
17. The searching method of claim 16, wherein the packet is an inbound IPSec packet in tunnel mode; the comparing step is used for comparing the source address of the outer header of the inbound IPSec packet in tunnel mode and the external network/wide area network (WAN) address of the peer table.
18. The searching method of claim 16, wherein the packet is an inbound IPSec packet in transport mode; the comparing step is used for comparing the source address of the inbound IPSec packet in transport mode and the external network/wide area network (WAN) address of the peer table.

19. The searching method of claim 16, wherein the packet is an inbound IP packet; the comparing step is used for comparing the source address of the inbound IP packet with the internal network/local area network (LAN) section of the peer table.
- 5 20. The searching method of claim 16, wherein the packet is an outbound IP packet; the comparing step is used for comparing the destination address of the outbound IP packet with the internal network/local area network (LAN) section of the peer table.
- 10 21. The searching method of claim 1, wherein the step of searching the peer-based Security Policy Database comprises a step for comparing a packet and the peer-based Security Policy Database.
- 15 22. The searching method of claim 21, wherein the packet is an inbound IPSec packet in tunnel mode; the comparing step is used for comparing the inner header of the inbound IPSec packet in tunnel mode with the selector of the security policy of the peer-based Security Policy Database.
23. The searching method of claim 21, wherein the packet is an inbound IPSec packet in transport model; the comparing step is used for comparing the header of the inbound IPSec packet in transport mode with the selector of the security policy of the peer-based Security Policy Database.
- 20 24. The searching method of claim 21, wherein the packet is an inbound IP packet; the comparing step is used for comparing the header of the inbound IP packet with the selector of the security policy of the peer-based Security Policy Database.
- 25 25. The searching method of claim 21, wherein the packet is an outbound IP packet; the comparing step is used for comparing the header of the outbound IP packet with the selector of the security policy of the peer-based

Security Policy Database.